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Report of the Committee on Gynecology of the Medical Society
of the State of California, April, 1896,

BY

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ECTOPIC PREGNANCY, WITH CASES AND REMARKS.

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Among all the abdominal conditions demanding a clear understanding of their nature, and prompt action on the part of the attendant, ectopic pregnancy holds a very important place. The field cannot be covered by the specialist. Cases must often be met by the general practitioner, for, while the condition is not necessarily rapidly fatal, a short delay may bring a condition beyond cure; therefore, the great importance of being thoroughly familiar with the condition and what may occur is paramount.

A classification is necessary to a clear understanding of the condition; its probable, possible, and actual dangers; a correct and quick appreciation of them, and the best way to treat them. I have adopted the following classification, given by J. Clarence Webster, as it seems to cover about all we know at present on this subject:

I. *Ampullar*: In which gestation begins in the ampulla of the tube. This is by far the most common origin.

1. Persistent: In rare instances the tubal gestation may go on to full time.

2. Rupture may take place early into the broad ligament—subperitoneo-pelvic, tubo-ligamentous, extra-peritoneal, broad-ligament gestation. (a) The gestation may continue to develop—subperitoneo-abdominal. (b) A secondary rupture of the subperitoneo-pelvic gestation may take place into the peritoneal cavity. (c) The gestation may come to an end by the formation of an hematoma, by supuration, by mummification, adipocere, or lithopedion formation.

3. Rupture may take place into the peritoneal cavity. (a) Tubo-peritoneal gestation, in which the escape of the fetus and membranes occurs into the peritoneal cavity, the placenta remaining in the tube, its development continuing. (b) The gestation terminates in various ways; by the formation of an hematocele, the patient dying from the shock and loss of blood, or from peritonitis. In some cases absorption of the mass may occur; in others, mummification, adipocere, or lithopedion formation may take place in the fetus. Suppuration may result.

4. The gestation may be destroyed. (a) By the formation of a tubal abortion and its passage through the fimbriated end of the tube

into the peritoneal cavity; (*b*) by the formation of an hematosalpinx; (*c*) by the formation of a mole; (*d*) by suppuration, resulting in a pyosalpinx; (*e*) by absorption after early death, by mummification, adipocere, or lithopedion formation.

II. *Interstitial*: The gestation may develop in the interstitial portion of the tube: (1) The gestation may go on to full time. (2) Rupture of the gestation into the peritoneal cavity may occur. (3) Rupture into the uterine cavity may occur. (4) Rupture both into the uterine and peritoneal cavities may occur. (5) Rupture may occur between the layers of the broad ligament. (6) After the death of the fetus it may remain in its sac, and possibly may undergo the same changes as in the other forms; *e. g.*, mummification, adipocere, or lithopedion.

III. *Infundibular*: The gestation begins in the outer end of the tube or in an accessory tube-ending. Under this heading are to be included the forms described as tubo-ovarian and tubo-abdominal, names which appear to the author to be unnecessary, since the gestation is a tubal one in origin, the end of the gestation sac merely becoming adherent to the abdominal wall, the ovary, or other of the viscera.

A general analysis of the classification leaves us: (1) Ampular: Gestation beginning in the ampulla of the tube; by far the most common. (2) Interstitial: Gestation in the interstitial portion of the tube. (3) Infundibular: Gestation in the outer end of the tube.

This places the gestation in some portion of the tube in about every case. We have, then, a tube which can only expand to a certain point with a growing ovum inside. The greatest limit of the tube is not equal to the size of the full term fetus, therefore it is almost inevitable that a growing ovum must burst the tube, and it must burst in one of two directions—either into the peritoneal cavity or into the broad ligament.

Rupture into the peritoneal cavity means hemorrhage and almost certain death to the mother and child. Rupture into the broad ligament means hemorrhage to a certain extent, which endangers the life of mother and child; still, both may escape and the child continue to develop, but ultimately it has no way to escape, except by secondary rupture into the peritoneal cavity. This leaves the patient with the ovum in the peritoneal cavity in the case of rupture either way, and almost the certainty of dying from hemorrhage at time of rupture.

I am of the opinion that it is not possible to make an exact diagnosis in all cases. However, with care, close watching in every case, examination under an anesthetic, and even exploration of the uterine cavity for decidual membrane in the doubtful cases, I feel

that information justifying an exploratory opening of the abdomen can almost always be obtained.

The principal conditions which may be mistaken for ectopic gestation, or for which it may be mistaken, are:

1. Uterine pregnancy.
2. Retroversion of the gravid uterus.
3. Ovarian tumors.
4. Cysts of the broad ligament; distended fallopian tubes.
5. Fibro-myoma and fibro-cystic tumors of the uterus.
6. Pelvic hematocele.
7. Pelvic inflammatory exudations.
8. Malignant disease in the abdomen or pelvis.
9. Pregnancy in the rudimentary horn of a malformed uterus.
10. Pregnancy in a well formed bicornute uterus.
11. Spurious pregnancy.
12. Perforation of the vermiform appendix, with rapid extravasation of fecal matter, and shock.

Study and consideration of cases and the symptoms, leads me to the conclusion, that the variations are so great in different cases, that one cannot lay down definite rules to cover every case. Yet I think we can get a very clear idea of the symptoms by following the enumerations given by George Haven:

(1) Absence, irregular appearance, and uncertain duration of menstruation. (2) Pain of severe and systematic character, which may be permanent at first, then absent for some weeks, to return later with renewed vigor. (3) Vaginal discoloration—a symptom of some importance, yet often noticed in cases where some other form of pelvic tumor is present. (4) General signs of pregnancy, such as nausea, enlarged and tender breasts, increase in the size of the papillæ, darkened areola, milk in the breasts, the presence of a tumor, irregular menstruation, and, possibly, irregular gait. (5) History of previous childbirth or miscarriage. This is important, as cases in nulliparous women are rare. (6) Expulsion of decidua. This symptom is of great importance, when present, although in the majority of cases, the clot and shreds of tissue are thrown away before a microscopical examination can be made. (7) Increase in size of the uterus, with the fundus either pushed forward, or to the right or left side. (8) Elongated, soft, or patulous cervix. (9) Appendages on one side containing a thin-walled and tender cyst. The fact, however, that a tumor is felt upon both sides, should have no bearing upon the diagnosis, as one tumor may be due to extra-uterine pregnancy, and the other to some form of tubal, ovarian, or pelvic trouble. (10) Pulsation of vessels in the neighborhood of

the cyst. (11) Rapid increase in size of the tumor. (12) Presence of fetal heart-sounds. (13) Presence of placental bruit. (14) Feeling the small parts of the child, either through vagina or rectum, or by conjoined manipulation.

From the fourth month to term, all the phenomena enumerated may be present. Cases after the fourth month are easier to diagnose, from the fact that symptoms 12, 13, and 14 may be present.

Rupture may occur in two ways—into the folds of the broad ligament or into the abdominal cavity. If it take place into the folds of the broad ligament, there will be sudden pain, with symptoms of more or less profound shock, and a distinct increase in the size of the tumor, due to the hematocele which is formed. If into the abdominal cavity, there will be pain, nausea, feeling of impending danger, restlessness, rapid and thready pulse, suffocation, thirst, blanching of the lips and finger-nails, and disappearance of the tumor.

Pregnancy in one horn of a bicornute uterus should not be mistaken for extra-uterine pregnancy. Hematocele would not be mistaken for extra-uterine pregnancy, as in a vast majority of cases the hematocele is secondary to the pregnancy, and will have been preceded by many of the symptoms described. In cases presenting all the symptoms of extra-uterine pregnancy, it is best to assume the worst until the contrary is proven, for waiting is the worst of all policies.

It is not my purpose to go into the differential diagnosis, but simply to give you the general symptoms so that one can be on the alert, and by close study of the particular case clear away the field and recognize the variations.

I wish to explain why I have included perforation of the vermiform appendix with rapid extravasation of fecal matter and shock as one of the conditions for which one may mistake ectopic gestation with rupture into the peritoneal cavity. My attention was first called to the resemblance of these two serious conditions through an article by Maurice Richardson, on extra-uterine pregnancy and pelvic hemorrhage. He says: "Leaving out the pallor of hemorrhage, the two cases are almost precisely alike. Not only are they similar in the suddenness of their onset, and in severe cases, in the rapid march to a fatal termination, but they resemble each other in the brilliancy of the results, after early surgical interference. In looking over a very large number of cases of appendicitis, I find that my mortality after operations diminishes with the time between the attack and the operation—that is to say, the earlier the operation the larger the percentage of recoveries. The same is true in the treatment of extra-uterine hemorrhages."

On first consideration of Dr. Richardson's conclusions I was inclined to think they were too sweeping, but having seen a case in which an able surgeon operated for appendicitis, and when the abdomen was opened found he had an ectopic gestation of the right tube that had burst, I am now convinced that the similarity is very great, and that both should be taken into consideration whenever either is being considered.

Treatment must depend on the condition as we find it in the particular case. In the early stages the ovum is still in the tube. Its destruction by administration to the mother of large doses of toxic drugs; puncture of the sac with the aspirating needle; injection of drugs into the gestation-sac, and the passage of an electric current through the gestation-sac, all of these procedures may well be taken up as one, and called the medical treatment of ectopic gestation.

Medicine, to the mother, has been abandoned. Puncture and aspiration is very dangerous to the mother, exposing her to internal hemorrhage, peritonitis and septicemia, and very uncertain in its effects on the child. Injection of drugs exposes the mother to the danger of hemorrhage, peritonitis and septicemia, and is uncertain in its effects on the child.

Electricity is also uncertain in its effects on the child. Its advocates have not yet decided what amount or which form should be used, and if the life of the ovum is destroyed, in many cases the abdomen may have to be opened to relieve the mother of the troublesome and dangerous remains. Therefore, I think it fair to conclude, that medical treatment holds forth very little chance of benefit and exposes the mother to a great many serious dangers.

My cases have been tubal, and had not ruptured. They were successfully treated by opening the abdomen and taking out the tube and ovum. We must choose either to leave these cases to nature and stand prepared to operate quickly in case of rupture, with the patient in an unfavorable condition for operation; the assistance and preparation, simply, what can be quickly arranged; and the surroundings unfavorable; or, carry out a well-planned operation while the patient is in a fairly good condition, and the surroundings what we care to make them. It is much better to operate as soon as a clear diagnosis can be made, or even to make an exploratory opening, to clear away the doubts, and do what can be done early and under favorable circumstances, than to wait and do an emergency operation.

In rupture into the broad ligament, the case is comparatively safe, and can be carefully watched and studied. However, I hold, on the grounds given above, that an early operation will give the mother

the best chance of a cure, and relieve her at once of a very dangerous condition.

In case of rupture into the peritoneal cavity, with hemorrhage; operation, to control the hemorrhage and give the mother a chance of life, is demanded.

In regard to the choice of operation, I think, in a large majority of cases, opening through the abdominal wall from above will give the best and most lasting results.

Where the rupture has taken place into the broad ligament, and the ovum is dead, the tumor bulging well toward the vagina, or pushing down the *cul-de-sac* of Douglas, an opening from the vagina, with drainage, etc., may be safely done, and a cure will result. However, there is always great uncertainty as to the attachment of the placenta, and an opening into and through the placenta might force one to open above to properly complete the operation. I contend, that when an operation is made through the vagina, we should always be prepared to open from above, if we cannot leave the patient in a satisfactory condition by vaginal opening.

CASE I.—Seen with Dr. Henry Gibbons, who has kindly given me a good history of it, which is as follows: Mrs. J——, married 17 years; mother of 8 children; had several abortions, last one a year and a half ago. Recovered satisfactorily from all these pregnancies. Some months ago was anemic with scanty menstruation. Improved under iron. Menses failed to appear on November 13, when they were expected, but came November 29, accompanied with severe pains in pelvis, similar to those of labor. Opium relieved. December 12, menses for five days. December 16, another attack of severe pain for which opium was given. No elevation of temperature or evidence of inflammation, although tenderness upon pressure was felt in hypogastric and right iliac regions, and *per vaginam*. A tumor was felt both externally and internally, closely associated with the uterus and upon the right side, presumed to be a tubal pregnancy. The uterus was enlarged and pushed forward. The tumor reached to within $2\frac{1}{2}$ inches of the umbilicus, and extended $3\frac{1}{2}$ inches to the right of the median line. Examination, though made with gentleness, excited pain, which soon became severe, and confirmed my suspicion of fallopian pregnancy. Dr. MacMonagle was called in consultation, and confirmed my diagnosis. Operation was decided upon and performed by him December 26th; uninterrupted recovery.

CASE II.—Mrs. M——, age 27; one child 7 years old; no miscarriage. After child was 3 months old, had severe attack of nausea and vomiting at time of menstruation. This returned with each menstruation, and has continued ever since. Menstruation was very profuse, lasting 9 days during one year. Afterwards had a continuous watery discharge; was always very much prostrated during menstruation. On January 3, 1896, had a very slight flow of blood; flow disappeared and returned January 6. Ceased on the 7th.

After very severe exercise on the 10th, had quite a free flow; continued until the 13th; on the 14th had severe pain in right iliac region; suffered for three hours; morphine gave temporary relief; on 15th pain became very severe and lasted three hours; relief without morphine. Returned at 1 P. M.; lasted about three hours; 16th and 17th, no pain; 18th, some continuous pain, and severe attack through the day called colic, and treated as such; vomiting, during this attack, in the morning; pain running down the leg; breasts enlarged and contain milk; areolæ and papillæ well marked; movement of bowels causes a feeling of distress and faintness. When walking, staggers at times, and cannot lie on either side without pain. Continuous thirst and very much depressed; no rise of temperature; abdomen enlarged and dull to $2\frac{1}{2}$ inches above the symphysis pubis, increasing more toward the right iliac region, and going above a line from the crest of the ilium. Vagina purple, cervix soft and velvety; os, patulous; uterus enlarged and pushed slightly to left; mass about as large as a mandarin orange in region of left ovary; mass as large as double fist in region of the right ovary and fallopian tube; very tender all about the uterus; bowels constipated. Made diagnosis of ectopic pregnancy unruptured; operated, removing uterus and both fallopian tubes and ovaries. The right tube contained fetus; the left ovary contained pus. Patient made uninterrupted recovery.

CASE III.—January 21, 1896, M. W.—, age 27 years; single; two abortions; produced first when 19 years old; second when 22 years. Has been well and regular since. Missed menstruation which should have come on December 1, 1895. Did not menstruate on January 1, 1896. Thought she was pregnant, and on January 14, 1896, consulted a doctor, who passed something into her womb to bring on flow. Felt severe pain on her return home; began to flow and fainted. Sent for family physician who treated her until 21st, when I was called in consultation. She had been in bed from the 14th; irregular flow, some clots and membranes. On examination I found breasts enlarged, containing milk, areolæ, and papillæ, well marked, abdomen slightly enlarged and tender in both iliac regions, vagina purple, cervix velvety, uterus enlarged and pushed to the right side, and a very tender mass in the region of the left tube, with strong pulsations over it. Gave ether to clear out the uterus and make a more thorough examination, when we concluded there was an ectopic pregnancy. Removed decidua membrane with the curette. After getting the consent of the family opened the abdomen and removed left ovary and tube containing ovum, etc. Patient made a good recovery.

CASE IV.—Mrs. J.—, age 30 years, married 14 years. Two children, age 12 and 10 years. No miscarriage; menstruation regular and normal. Family physician called January 28; found her flowing. Pain like beginning labor; temperature, 101.2° F.; pulse, 100. Frequent urination and some tenesmus. February 2d had a chill; temperature, 104° ; pulse, 118; pain in left iliac region. I was called in consultation; found temperature, pulse, etc., as above. Vaginal examination showed enlarged uterus and very tender mass in region of left ovary and tube. Made diagnosis of pus-tube.

Operated in the morning and removed tube containing ovum and sac. The patient did not do well, getting an attack of cystitis, which I found was due to gonococci, no doubt carried from the vulva to the bladder by the catheter. This caused a great deal of trouble, and on the eighth day after operation she had a chill. As I could not find any indication of pus, I concluded she had malaria. On large doses of quinine she improved. The cystitis has been very obstinate, but now seems cured, leaving her very much prostrated and broken in her nervous system.

From a review of the literature upon this important subject, and from my own experience with it, I desire to submit the following conclusions:

1. A large majority of ectopic gestations begin in some part of the tube.
2. Pain is an important and almost constant symptom.
3. A growing ovum must burst the tube.
4. Rupture must take place into either the peritoneal cavity or broad ligament.
5. When discovered, ectopic pregnancy should be operated on as soon as arrangements can be made for a careful and perfectly aseptic operation.
6. An exploratory incision is justified when there is a reasonable assurance of ectopic pregnancy.
7. Rupture into the peritoneal cavity, with hemorrhage, demands operation at once.
8. The suprapubic operation is the best in a large majority of cases.
9. The vaginal operation should be chosen in the cases where one feels sure the mass is well walled off from above and can be easily reached from the vagina.
10. In doing the vaginal operation one should always be prepared to complete it from above in case of complications.
11. Early operation and removal of the tube, sac, and contents will give the best results.

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